

### Remarks

Examiner, in the Official Action dated June 17, 2003, objected to the Specification as not having headings, and also to claim 7. An "a" should be provided before "longitudinal" in line 4 of claim 7. Claims 14 and 15 were rejected under 35 USC 112, second paragraph, as not having an antecedent basis for "pipes" and "the said pipes". Claims 7-9 were rejected as previously rejected under 35 USC 102(b) as anticipated by Kazlauskas. Claims 10, 14, and 15 are rejected under 35 USC 103(a) as unpatentable over Kazlauskas in view of Nelson et al (US 3,328,556). The Examiner stated that Nelson shows the welding of thick plates by a plurality of layers in one pass. Examiner combined the two references for an obviousness objection. Examiner also rejected claims 11-13 as unpatentable over Kazlauskas in view of Nelson as applied to claim 10 above, and further in view of Friedman et al (US 4,019,016). In this rejection, Examiner uses Friedman to show the addition of controlling the frequency and amplitude of the torch oscillations in order to obtain a high quality weld.

In paragraph 13, Examiner found that the language added to amend the main claims did not narrow the scope of those claims to exclude Kazlauskas.

#### Applicant's Argument Regarding the 102(b) Rejection.

Applicant has added the word "adjacently" to the main claim 7, and the phrase "said welding torches adjacent to each other" to claim 10. The use of this language, it is submitted, has the main claims avoiding anticipation by Kazlauskas. Kazlauskas has his torches spaced forty-five degrees apart to accomplish his objectives. These torches are clearly not adjacent to each other.

Applicant's Argument Regarding the Rejection of Claims under 35 USC 103.

With respect to the obviousness rejection, applicant notes that Nelson et al is combined with Kazlauskas in the obviousness rejection of both paragraph 10 and 11 of the Official Action. Applicant submits that Nelson et al may not be properly combined with Kazlauskas to reject the claims as now amended for the reasons to follow. In the amended claims, the welding process specifies the welding of pipes. Nelson et al applies to plates which require a linear movement of the torches as opposed to pipes which move in a curvilinear manner, necessitating different consideration in the structure and orientation of the welding torches unobvious from welding torches used in plates. Further, and more specifically, to combine Kazlauskas with Nelson et al, an incentive for Kazlauskas to place the welding torches adjacent to each other must be present. It would not be obvious how to lay two layers in one pass without the torches adjacent to each other. Applicant submits that Kazlauskas spaces his torches at forty-five degrees to allow each torch to cover one fourth of the weld around the circumference of the pipe. A critical consideration in Kazlauskas is the effect of gravity on the weld bead as laid. Kazlauskas contemplates welding large diameter pipes. The welds on these larger pipes are affected by gravity as the molten metal will flow within the weld groove subject to gravity and dependent on which quadrant of the pipe is being welded. The relatively long weld grooves in a large diameter pipe exacerbate the problem of producing a uniform weld bead around the circumference of the pipe. Kazlauskas places much emphasis on factors involved in the welding process which minimize the effect of gravity on the welding procedure. Three factors are specifically called out including welding current, rate of movement of welding electrode along the

welding groove, and rate of feeding of the filler wire. These factors are considered critical in forming a proper first or root pass. Subsequent layers are then added to this root pass forming a raised annular bead as key in reducing the effect of gravity on the welding process. There is no incentive given the structure and function of his apparatus to apply two welding layers at once due to the care needed to provide a proper root pass. In fact, applying two layers in one pass would be in direct opposition to his goal to produce a proper root pass prior to subsequent passes which ultimately balances the effect of gravity on the welding of large diameter pipes. Applicant submits, therefore, that Nelson et al cannot be properly combined with Kazlauskas, as an incentive for Kazlauskas to have torches spaced adjacently is lacking.

Regarding the objection to the Specification, applicant has amended the Specification to add headings without entering new matter. Also, the amended claims now meet the objections raised in paragraphs three and four of the Official Action.

Applicant realizes that entry of an Amendment After Final Rejection is not a matter of right. In this situation, applicant requests entry as this Amendment was the first opportunity that applicant had to discuss Nelson et al combined with Kazlauskas. Reconsideration of the rejection of the claims is requested, therefore, and allowance of the claims as now presented is solicited.

Respectfully submitted,



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